9. ENGINE AND BOAT MAINTENANCE AND REPAIR BMPS

This section addresses general boat maintenance, engine maintenance, and repair. These activities may occur onboard vessels while in the water or in shore-side facilities, and can contribute significant amounts of petroleum-based hydrocarbons and heavy metals to the water. Following are some steps that marina operators can take to minimize the release of these pollutants into the water.

Perform maintenance work inside buildings whenever possible.
Conducting boat maintenance work inside an enclosed area keeps contaminants where rain cannot wash them into water and where they can be easily collected and disposed of. The following activities should be conducted with the vessel out of the water, and as appropriate, within an area specifically designed for this purpose:

- repairs requiring the disassembly of the outboard or lower drive unit;
- bilge repairs requiring opening or penetrating the hull;
- scraping, sandblasting, or painting the hull exterior or drive units; and
- any other activities which may cause an uncontained discharge of oil, chemicals, nutrients, or other contaminants to the water resource.

For some marinas, having dedicated work areas may not be feasible because of various constraints (site design, cost). In these cases, all the areas where maintenance is performed must be managed to prevent polluted runoff.

On-board Engine Repair and Maintenance
Activities which may be conducted on-board vessels while in the water are routine engine tune-ups, oil changes, and other minor services and repairs such as bilge pump repair. Removing and replacing an engine can be performed on board if one is careful to prevent a discharge of engine fluids or other hazardous waste into the water. The bilge should be inspected and cleaned before starting work that opens or penetrates the hull. All water, oil, or foreign materials found in the bilge should be cleaned using approved absorbent materials to remove contaminated bilge water.

ENGINE FLUIDS

Engine fluids should not be allowed to discharge to floor drains or other outlets unless the outlet conveys these fluids to an approved treatment device or to a secure storage container where it can be properly treated and disposed of. Drip pans or other protective devices should be used when working with oil, solvents,

paints and paint mixing to catch accidental spills or leaks from drains, nozzles, or other storage or transfer systems.

Engine Parts

Engines and engine parts should be stored on an impervious surface such as sealed asphalt or cement, and covered to avoid contact with stormwater. Care should be taken to prevent oil and other petroleum fluids from leaking onto the open ground.

Do not wash engine parts with solvent over open ground. Parts should be washed in a container or parts washer with a lid that prevents evaporation. The parts should be rinsed or air-dried over the parts cleaning container. Used washing fluid should be recycled or disposed of by a licensed waste hauler. Water soluble engine washing fluids should be treated in the same manner as other industrial wastewaters.

Rinsewater, washwater, and other drainage from maintenance work areas should be directed to an oil/grit separator or a filtration system prior to discharge to sanitary sewers or to a holding tank for proper disposal off-site.

Vertical lift and marine railway devices should be kept clean. Prior to lowering a lift or railway, the device should be swept clean of debris, and any oil or hazardous substance should be cleaned from the device to prevent contamination of the water resource.

Antifreeze

Use and encourage the use of propylene glycol based antifreeze rather than ethylene glycol based antifreeze. One simple way for marinas to encourage such use is to only offer the propylene glycol product for sale. Collect and reuse or recycle waste antifreeze in containers clearly marked "Antifreeze Only." See the Hazardous Materials and Wastes BMPs section.

Spill Contingency Plan

A spill contingency plan should be developed for each area where oil and hazardous materials are used or stored. Such plans should specify potential spill sources, oil and hazardous materials used or stored in the area, prevention measures (e.g., security, inspection, containment, training, equipment), and spill emergency procedures, including health and safety, notification, and spill containment and control measures. A drainage plan should be included as part of the plan. Emergency telephone numbers should also be included in the plan and posted at critical locations.

Appropriate containment and control materials should be stored in a clearly marked location, readily accessible to work and storage areas. These materials should include absorbent pads and booms, empty sand bags, sewer pipe plugs, speedi-dri absorbent, square end shovels, a pry bar, curtain boom, drain covers, fire extinguishers, and a copy of the spill contingency plan.

Do not discharge waste oils, anti-freeze or other liquid waste (e.g., paints, solvents, detergents, rinsewater) onto ground, or allow them to enter storm drains. Waste oil and solvents should be collected in separate, clearly labeled drums. Do not dispose of liquid waste in dumpsters. See the Hazardous Materials and Wastes BMPs section.